UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
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ART UNIT	PAPER NUMBER
2167	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/761,160	SHAKIB ET AL.
	Examiner	Art Unit	
	SUSAN FOSTER RAYYAN	2167	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **3** MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *14 March 2008*.

2a) ☐ This action is **FINAL**.　　2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-27* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-27* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a) ☐ All　b) ☐ Some * c) ☐ None of:

　　　1. ☐ Certified copies of the priority documents have been received.

　　　2. ☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-27 are pending.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

the claimed invention is directed to non-statutory subject matter.

3.   Claims 1-12 are rejected as being directed to non-statuatory subject matter.

        Claim 1 is directed to a system comprising an infrequent word identifier that identifies infrequent words that occur in less than a threshold number of documents, a frequent word index that maps the location of documents that contain words that occur in more than the threshold number of documents, an infrequent word index, maintained separately from the frequent word index, that maps the location of documents that contain the infrequent words, an index scanning component that, in response to a query containing an infrequent word, scans the infrequent word index to find the location of documents containing the infrequent word.. The claim does not provide physical hardware. At least one of the claimed elements of a system claim must include physical hardware Examiner has interpreted each of the claim elements as software per se. The claim is software per se and therefor directed to non-statuatory subject matter.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11, 13-25,27 are rejected under 35 U.S.C. 102(b) as being anticipated

by US Patent Number 6,070,158 issued to Steven T. Kirsch et al ("Kirsch").

As per claim 1 Kirsch teaches:

an infrequent word identifier that identifies infrequent words that occur in less than a

threshold number of documents (see column 2, lines 25-32, 47-53);

a frequent word index that maps the location of documents that contain words that

occur in more than the threshold number of documents (column 10, lines 30-35, 40-45,

stop list and part of record);

an infrequent word index, maintained separately from the frequent word index, that

maps the location of documents that contain the infrequent words (column 2, lines 45-

54 and column 6, lines 64-67,column 11, lines 23-30 as indexing two word term

phrases, column 2, lines 45-50, as basic occurrence index storing location information

for each index term);

an index scanning component that, in response to a query containing an infrequent

word, scans the infrequent word index to find the location of documents containing the

infrequent word (column 2, lines 27-30,47-50).

As per claim 2, same as claim arguments above and Kirsch teaches:

wherein the frequent word index is stored by document (column 10, lines 40-45).

As per claim 3, same as claim arguments above and Kirsch teaches:

wherein the frequent word index is partitioned by document (column 10, lines 40-45).

As per claim 4, same as claim arguments above and Kirsch teaches:

wherein the frequent word index is distributed across multiple computing

systems(column 6, lines 64-66).

As per claim 5, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is stored by document(column 6, lines 33-38).

As per claim 6, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is partitioned by document(column 6, lines 33-38).

As per claim 7, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is distributed across multiple computing computer

systems (column 6, lines 64-66).

As per claim 8, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is stored by word (column 10, lines 20-26).

As per claim 9, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is partitioned by word (column 10, lines 20-26).

As per claim 10, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is stored on a single computing computer system

(column 6, lines 64-66).

As per claim 11, same as claim arguments above and teaches:

wherein the index scanning component, in response to a user query containing an

infrequent word, retrieves document locations for documents having the infrequent word

from the infrequent word index (column 2, lines 27-30,47-50) and transmits the retrieved

document locations to computer systems containing frequent word indexes for the

retrieved documents (column5, lines 19-27).

As per claims 13,18 Kirsch teaches:

scanning the set of documents and gathering infrequent words that occur fewer times

than a threshold number of the set of documents(see column 2, lines 25-32, 47-53);

constructing an infrequent word index that maps infrequent words to locations of

documents that contain the infrequent words(column 2, lines 45-54);

constructing a frequent word index, separately maintained from the infrequent word

index, that maps frequent words that occur in a number of documents of the set of

documents that is greater than the threshold amount to locations of documents that

contain the frequent words(column 10, lines 30-35, 40-45, stop list and part of record

and column 6, lines 64-67);

and examining the terms in the user query to identify any terms are infrequent words;

and searching the infrequent word index for the terms that are identified as infrequent

words(column 2, lines 27-30,47-50).

As per claim 14, same as claim arguments above and Kirsch teaches:

comprising storing the infrequent word index in a dedicated computer system(column 6,

lines 64-66).

As per claim 15, same as claim arguments above and Kirsch teaches:

comprising storing the infrequent word index in dedicated partitions on computer

systems that also store the frequent word index (column 6, lines 64-66).

As per claim 16, same as claim arguments above and Kirsch teaches:

comprising storing the infrequent index by word. (column 10, lines 20-26).

As per claim 17, same as claim arguments above and Kirsch teaches:

comprising storing the infrequent index by document(column 6, lines 33-38).

As per claim 19 Kirsch teaches:

identifying infrequent words that occur in less than a threshold number of

documents(see column 2, lines 25-32, 47-53);

mapping, in a frequent word index ,the location of documents that contain words that

occur in more than the threshold number of documents in a frequent word index(column

10, lines 30-35, 40-45, stop list and part of record);

maintaining, separately from the frequent word index, an infrequent word index that

maps the location of documents that contain the infrequent words(column 2, lines 45-

54 and column 6, lines 64-67);

in response to a query containing an infrequent word, scanning the infrequent word

index to find the location of documents containing the infrequent word(column 2, lines

27-30,47-50).

As per claim 20, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is stored by document(column 6, lines 33-38).

As per claim 21, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is partitioned by document(column 6, lines 33-38).

As per claim 22, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is distributed across multiple computing computer

systems(column 10, lines 20-26).

As per claim 23, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is stored by word (column 10, lines 20-26).

As per claim 24, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is partitioned by word (column 10, lines 20-26).

As per claim 25, same as claim arguments above and Kirsch teaches:

wherein the infrequent word index is stored on a single computing computer

system(column 6, lines 64-66).

As per claim 27 Kirsch teaches:

means for scanning the set of documents and gathering infrequent words that occur in

a number of documents that is less than a threshold amount; means for constructing an

infrequent word index that maps infrequent words to locations of documents that contain

the words(see column 2, lines 25-32, 47-53);

means for constructing a frequent word index, separately maintained from the

infrequent word index, that maps frequent words that occur in a number of documents

that is greater than the threshold amount to locations of documents that contain the

frequent words(column 10, lines 30-35, 40-45, stop list and part of record and column 6,

lines 64-67);

and means for examining the terms in the user query to identify any terms are

infrequent words and means for searching the infrequent word index for the identified

infrequent words (column 2, lines 27-30,45-54 and column 6, lines 64-67).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

Claims 12, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirsch as applied to claims 1, 19 above, in view of US Patent Application Publication Number 2002/0032772 issued to Bjorn Olstad ("Olstad").

As per claim 12, same as claim arguments above and Kirsch does not explicitly teach an index cache. Olstad does teach a index cache (paragraph 85, lines 1-4) to improve relevancy in search services (paragraph 18). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Kirsch and Pratt with an index cache to improve relevancy in search services as described by Olstad (paragraph 18).

As per claim 26, same as claim arguments above and Kirsch does not explicitly teach including an index cache. Olstad does teach a index cache (paragraph 85, lines 1-4) to improve relevancy in search services (paragraph 18). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Kirsch and Pratt with an index cache to improve relevancy in search services as described by Olstad (paragraph 18).

Response to Arguments

6.   Applicant's arguments filed March 14, 2008 have been fully considered but they are not persuasive.

Applicant argues prior art of record does not teach an infrequent word index, maintained separately from the frequent word index, that maps the location of documents that contain the infrequent words. Kirsch teaches this limitation at column 2, lines 45-54 and

column 6, lines 64-67, and column 11, lines 23-30 as indexing two word term phrases

and column 2, lines 45-50, as basic occurrence index storing location information for

each index term. Kirsch teaches this at column 6, 64-65, as separate indexes.

   Applicant argues prior art of record does not teach scanning the set of documents

and gathering infrequent words that occur fewer times than a threshold number of the

set of documents. Kirsch teaches this limitation at (see column 2, lines 25-32, 47-53).

Kirsch teaches at column 10, lines, 30-32 (term frequency) frequency of occurrence

exceeds some threshold of occurrence over some set of documents. Kirsch, column 2,

lines 4-53 describe a web search service which indexes documents by first removing

the words which appear too "frequent" leaving the "infrequent" terms to be indexed. The

words not identified as frequent words are the infrequent words.

Applicant argues Kirsch does not teach "frequent word index is stored by word". Kirsch

teaches this limitation at column 10, lines 30-45 as identify frequencies of occurring

terms over at threshold set of documents. Frequent terms are added to stoplist. The

term list is associated with the document and a cumulative number of occurrences of

each term, word count of document and document ID. In addition describes a phrase

stop list (column 10, lines, 53 to column 11, line 30 describes indexing a phrase stop

list.

Contact Information

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Susan F. Rayyan whose telephone number is 571-272-

1675. The examiner can normally be reached on M-F, 7:30-4:00.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Cottingham can be reached on 571-272-7079. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

                                              /John R. Cottingham/
                                              Supervisory Patent Examiner, Art
                                              Unit 2167

Susan Rayyan
June 21, 2008